

## ATI Allegheny Ludlum Type 441 Alloy Stainless Steel

Category : Metal , Ferrous Metal , Stainless Steel , T 400 Series Stainless Steel

### Material Notes:

Allegheny Ludlum stainless Type 441 alloy is a heat resisting ferritic grades providing good oxidation and corrosion resistance for applications like automotive exhaust system components. Dual stabilized with columbium and titanium to provide good weld ductility and resistance to intergranular corrosion in the weld heat affected zone. Type 441 alloy has very good resistance to progressive scaling in both continuous and cyclic oxidizing laboratory test environments. Type 441 is weldable using traditional tungsten inert gas and metal arc inert gas procedures commonly used with stainless steel. When a filler wire is required, a matching Type 441 chemistry electrode can be used with the alloy to maintain compatible corrosion and oxidation resistance in the weld area. It is suggested that hydrogen not be mixed with inert gas (unless post weld annealing is planned) because ferritic stainless steels are subject to hydrogen embrittlement. Information provided by Allegheny Ludlum Corporation.

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_ATI-Allegheny-Ludlum-Type-441-Alloy-Stainless-Steel.php](http://www.lookpolymers.com/polymer_ATI-Allegheny-Ludlum-Type-441-Alloy-Stainless-Steel.php)

Physical Properties	Metric	English	Comments
Density	7.711 g/cc	0.2786 lb/in <sup>3</sup>	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell B	84	84	typical
Tensile Strength, Ultimate	510 MPa	74000 psi	Typical
Tensile Strength, Yield	331 MPa	48000 psi	Typical
Elongation at Break	29 %	29 %	typical in 2" (50 mm)

Thermal Properties	Metric	English	Comments
CTE, linear	9.20 $\mu\text{m}/\text{m}\cdot\text{C}$	5.11 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 - 100 °C	@Temperature 68.0 - 212 °F	
	10.3 $\mu\text{m}/\text{m}\cdot\text{C}$	5.72 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 - 300 °C	@Temperature 68.0 - 572 °F	
	10.6 $\mu\text{m}/\text{m}\cdot\text{C}$	5.89 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 - 500 °C	@Temperature 68.0 - 932 °F	
	10.8 $\mu\text{m}/\text{m}\cdot\text{C}$	6.00 $\mu\text{in}/\text{in}\cdot\text{F}$	
	@Temperature 20.0 - 700 °C	@Temperature 68.0 - 1290 °F	

Thermal Properties	Metric	English	Comments
	@Temperature 20.0 - 800 °C	@Temperature 68.0 - 1470 °F	
	11.9 µm/m-°C	6.61 µin/in-°F	
	@Temperature 20.0 - 900 °C	@Temperature 68.0 - 1650 °F	
Maximum Service Temperature, Air	1010 °C	1850 °F	Continuous service

Component Elements Properties	Metric	English	Comments
Aluminum, Al	0.050 %	0.050 %	
Carbon, C	0.020 %	0.020 %	
Chromium, Cr	18 %	18 %	
Iron, Fe	79 %	79 %	as balance
Manganese, Mn	0.33 %	0.33 %	
Nickel, Ni	0.32 %	0.32 %	
Niobium, Nb (Columbium, Cb)	0.69 %	0.69 %	
Nitrogen, N	0.021 %	0.021 %	
Phosphorous, P	0.025 %	0.025 %	
Silicon, Si	0.39 %	0.39 %	
Sulfur, S	0.0020 %	0.0020 %	
Titanium, Ti	0.27 %	0.27 %	

Electrical Properties	Metric	English	Comments
Electrical Resistivity	0.0000587 ohm-cm	0.0000587 ohm-cm	

## Contact Songhan Plastic Technology Co.,Ltd.

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